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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,533	04/19/2005	Pierre Fayet	FRR-16006	4554
40854	7590	06/11/2008		
RANKIN, HILL & CLARK LLP 38210 Glenn Avenue WILLOUGHBY, OH 44094-7808			EXAMINER CHEN, KEATH T	
			ART UNIT	PAPER NUMBER
			1792	
			MAIL DATE	DELIVERY MODE
			06/11/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/529,533	Applicant(s) FAYET ET AL.	
	Examiner Keath T. Chen	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, and 5-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/01/2008 has been entered.

Response to Amendment

The claim amendment filed on 05/01/2008, addressing rejection of claims 1, 3, 5-12 from the final office action (01/11/2008), by amending claim 1 is acknowledged and will be addressed below.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35 U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1, 3 and 5-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seeser et al. (US 5879519, hereafter '519), further in view of Kuehnle (US 3884787, hereafter '787) and Fu et al. (US 6306265, hereafter '265).

'519 teaches some limitations of claim 1:

A device (Fig. 14) for coating a web material (#73A) in a single step PECVD process (magnetron #26-28, same as #30 of Fig. 5, is capable of PECVD by feeding reactive gas; by feeding the same reactive gas to each of #26-28 is a single step

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PECVD), the device comprising: a vacuum chamber (see Fig. 2, #12, vacuum pump system, col. 6, line 38-39, Fig. 15 is one embodiment of Fig. 2) and a rotating drum (#79, col. 16, line 40), more than two independent, substantially identical (each #26-28 are structurally substantially identical to #30 of Figs. 4&5, see Fig. 1), rectangular magnetron electrodes (#26-28, deposition devices include magnetron #30, see Fig. 1), each magnetron electrode (#40A, the altered inverse linear magnetron, Fig. 37A, alternate embodiment of #30, col. 25, line 32-33) being powered with an alternating voltage by its own power supply unit (#242, col. 25, lines 53-55, notice that #242 is available to each magnetron electrode), and a plurality of gas supply lines (#57, Fig. 6, col. 26, lines 1-4; or #37 which more clearly seen in Fig. 4 and 5), the magnetron electrodes are arranged with the magnetron faces facing the circumferential surface of the drum and at a same distance the lengths of the magnetron faces extending parallel to a drum axis and the widths of the magnetron faces extending substantially tangential to the circumferential surface, and the gas supply lines extend between neighboring magnetron (#57, shown in Fig. 7, is outside of magnetron, therefore, between neighboring magnetron) and substantially parallel to the drum axis (all these are shown in Fig. 15).

'519 does not teach the other limitations of claim 1:

The drum being one of electrically grounded, electrically floating, and negatively biased; a center pole and a peripheral pole, the two poles having opposite polarities and the peripheral pole extending around the center pole.

'787 is an analogous art in the field of PECVD of flexible film (or web, col. 1, lines 20-24), particularly in providing uniform coating (col. 5, lines 5-6; '519, col. 3, lines 29-35). '787 teaches negatively bias drum (#58, Fig. 2) for the purpose of harder deposit with lower resistivity (col. 9, lines 57-63).

'265 is an analogous art in the field of thin film deposition (title), particular in improving sputtering magnetron design (col. 4, lines 31). '265 provides an unbalanced magnetron design (Fig. 7 and Fig. 17) with inner poles having opposite polarities and peripheral pole extending around the center pole; and the inner poles having magnetic flux less than peripheral poles by a factor of 2 (col. 11, lines 54-58), for the purpose of supporting a higher-density plasma deep into the processing area (col. 11, line 60 to col. 12, line 11).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have applied negative bias, as taught by '787, to the drum (#79) to the apparatus in Fig. 15 of '519 for the purpose of harder deposit with lower resistivity; and to have replaced the magnetron of '519 with the magnetron design from Fig. 7 of '265 for the purpose of supporting a higher-density plasma deep into the processing area, with a reasonable expectation of success.

'519 further teach the limitation of:

Claim 3: The gas supply lines extend between adjacent magnetron faces (as discussed above).

Claim 5: The supply lines (#57) comprise rows of gas outlets arranged for gas injection substantially parallel to the magnetron faces.

Claim 6: Further comprising wall elements (baffle #32, see Figs. 4 and 5, col. 28, lines 16-20) extending along the longitudinal edges of the magnetron faces and towards the rotating drum.

Claim 7: The magnetron electrode constitutes a twin magnetron (Fig. 7, two B field are shown).

Claim 8: Gas from said plurality of gas supply lines is supplied to the space between magnetron faces (gas is flowing toward vacuum system #12 through these paths, see Fig. 15 and Fig. 2) and the rotating drum is allowed to be removed in an axial direction and between adjacent magnetron faces (as shown in Fig. 15, removing drum in an axial direction and between #27 and #28 is allowed. Such movement is required for service and assembly of the transporting means).

Claim 9: The magnetron faces comprise electrode pieces of a non magnetic material (#43, stainless steel, col. 8, lines 52-54).

Claim 10: The electrode pieces (#43) of the magnetron faces comprise channels (#45, col. 8, lines 54-55) for receiving a cooling medium.

Claim 11: The magnetron electrodes constitute magnetrons of an unbalanced type (Fig. 40, alternative magnetron, col. 27, lines 23-37).

'519 further teaches permanent magnets supplying magnetic field of rectangular racetrack configuration, but is silent as to the magnetic strength of the component.

'265 teaches the limitations of claim 12:

The magnetron faces comprise permanent magnetic central and peripheral poles, the central pole having a magnetic strength that is about half of a magnetic strength of the peripheral pole (col. 11, lines 54-58).

Response to Arguments

Applicant's arguments filed 12/03/2007 have been fully considered but they are not persuasive.

2. In regarding to 35 USC 103(a) rejections of claims 1, 3, 5-12 based on Seeser ('519) and Kuehnle ('787), applicant's argument are: a) '519 directs to a multi-step sputter apparatus, not PECVD; see the fourth paragraph of page 5 and the first paragraph of page 6; b) '787 teaches one step sputtering, but does not teach how to use '519 in PECVD; see the fifth paragraph of page 5 and the first paragraph of page 6; c) neither references teaches two similar electrodes arranged side by side; see the second paragraph of page 6; d) '195 does not teach power supply to each magnetron electrode; see the third paragraph of page 6; e) '195 does not teach a series of "substantially identical" electrodes, see the top of page 7; f) neither reference teaches the new limitation of amended claim 1; see the first complete first paragraph of page 7.

These arguments are found not persuasive.

a) '519 apparatus is capable of PECVD by feeding the magnetron with reactive gas (see Fig. 5, for example). The identity of gas species is an intended use in the apparatus claim. By using the same gas species in each magnetron-enhanced electrodes (#30, Fig. 1), this apparatus is capable of single step PECVD process.

It has been held that claim language that simply specifies an intended use or field of use for the invention generally will not limit the scope of a claim (*Walter*, 618 F.2d at 769, 205 USPQ at 409; MPEP 2106). Additionally, in apparatus claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim (*In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963); MPEP2111.02). When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (*In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977); MPEP 2112.01).

Therefore, there is no need for any of the reference to teach single step PECVD, as long as the apparatus is capable of performing single step PECVD.

The formation of plasma from the reactive gas depends on the operating parameters (target, gas, power, etc). Furthermore, target is intended use. Without the presence of target, the magnetron electrodes will produce pure PECVD.

b) There is not need for '787 or any reference to teach PECVD since '519's apparatus is capable of single step PECVD.

c) '195 does teach a series of "substantially identical" electrodes, as shown in Fig. 1 a plurality of magnetron-enhanced devices #30, col. 7, lines 10-14. These devices are side by side in the perimeter of the drum #14. See Figs. 9 and 16, for example.

d) Each magnetron-enhanced devices #30 in Fig. 1 has its own power supply, as Fig. 5 (or Fig. 7 or Fig. 37a) illustrates one of the #30.

e) '195 does teach a series of "substantially identical" electrodes, as shown in Fig. 1 a plurality of magnetron-enhanced devices #30, col. 7, lines 10-14. These electrodes are substantially the same, with or without various targets. Notice the identity of the target is intended use, see discussion above.

f) The newly added limitation is currently rejected by '519, '787, and '265, as discussed above.

3. In regarding to 35 USC 103(a) rejections of claim 12 based on '519, '787, and Fu ('265), applicant's arguments are g) '265 does not teaches '519's device be modified to be used in a PECVD process; see the first complete paragraph of page 8; and h) '265 does not teaches some other limitations of parent claims; see the second complete paragraph of page 8.

These arguments are found not persuasive.

g) '519's device is capable of performing PECVD. There is no need of '265 teaching magnetron enhanced PECVD.

h) In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208

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USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keath T. Chen whose telephone number is 571-270-1870. The examiner can normally be reached on M-F, 8:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. T. C./
Examiner, Art Unit 1792

/Michael Cleveland/
Supervisory Patent Examiner, Art Unit 1792